Idaho Department of Fish and Game

STANDARD STREAM SURVEY (7.0.1) APPLICATION

OPERATION MANUAL

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Introduction

This application was developed by a team of Idaho Department of Fish and Game Fishery Biologists to serve as the data entry application for the IDFG statewide stream database. It is designed to help biologists enter field data in a consistent format and is capable of being incorporated into the Idaho Fish and Wildlife Information System database, IFWIS. This data will then be made available to all department personnel through the intranet, to agencies through a web service, and to the general public through the internet.

One of the benefits of this application is the consistent data format which allows for better comparisons between similar bodies of water or comparisons of the same body of water over time. The easy access of this data will help Fish Managers and Environmental Biologists give information on the presence/absence of Endangered or Threatened fish species quickly and accurately. Administrative personnel will be able to answer questions like "Where can I find westslope cutthroat trout (or any other species)?" or "What fish are in this stream?" with a couple of clicks of the mouse. Fishery and Research Biologists will be able to gather and summarize data for reports and produce report quality tables.

System Requirements

The Standard Stream Survey application will work with Windows 7, Windows Vista, and Windows XP and Microsoft Office 2007 or higher. This application will work with Microsoft Office 2000 but several features, like instant data retrieval, will not work and data will have to be extracted through the intranet. Also the .Net Framework2.0 or higher and MDAC 2.7 or higher must be installed on the machine. The recommended machine configuration should include Windows 7 and Microsoft Office 2007. Assistance will be provided, if necessary, to insure proper installation of the application.

Standard Stream Survey Website

The Standard Stream Survey website (Figure 1) can be found through the Idaho Department of Fish and Games intranet. If the user is connected to the IDFG Domain, the user may type http://nr2 to get to the IDFG Nampa Research website. The Standard Stream Survey website is location under 'Databases'. On the webpage are "SSS Data Links" and "SSS Data Access Downloads" section. The Stream Survey application install link is located under "SSS Data Access Downloads". Click on this link, StreamSurvey7.0.1, and it will take the user to the application install page.

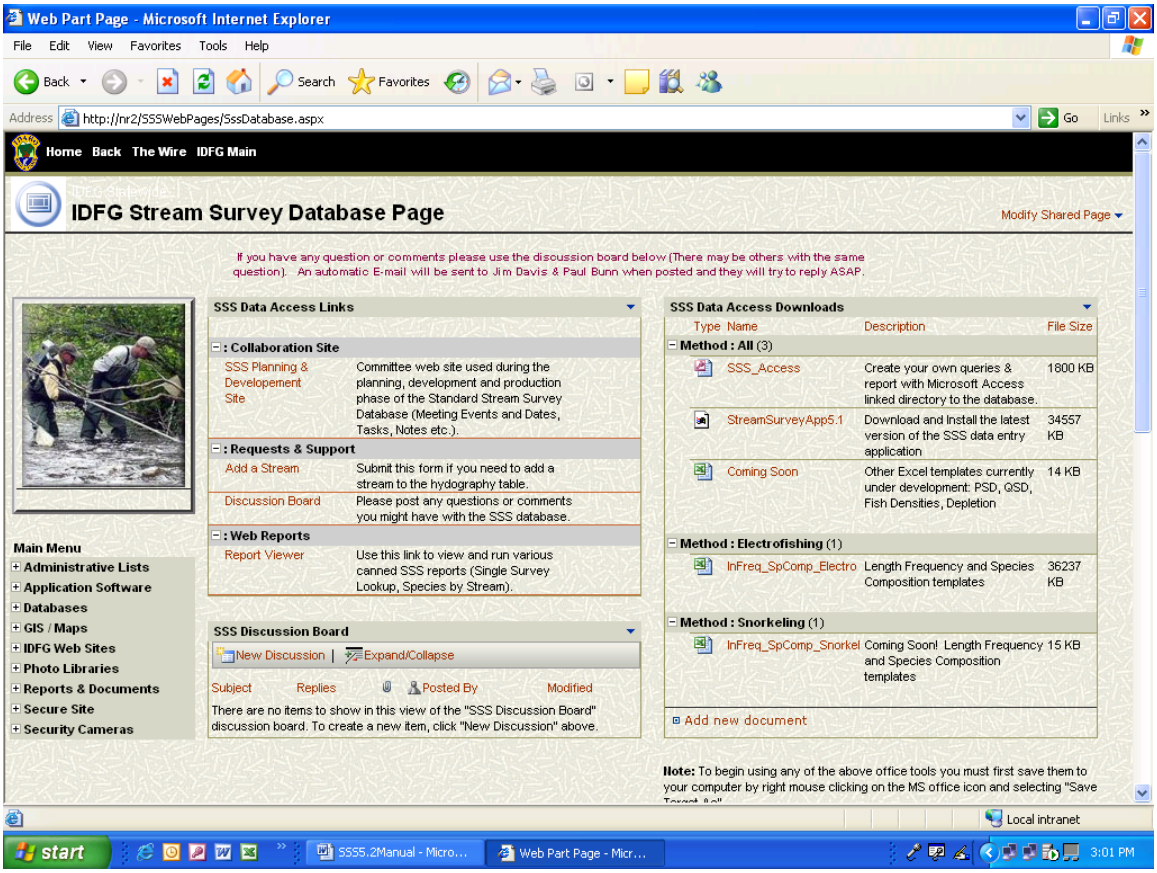


Figure 1. Standard Stream Survey webpage.

Installation

The application can be downloaded from link, StreamSurvey7.0.1, on the NR2/StreamSurvey webpage; go to http://NR2, select Databases, select StreamSurvey. This link will open the Install page. Click the install button (Figure 2) and the application will install following the directions. The method we use to install this application also allows for automatic updates. When the application starts it first checks for updates; if an update has been made it will add the files and update the application without the user having to uninstall and reinstall.

What's New in Version 7.0.1

There is a new type of data entry grid used for all the data entry grids. These grids allow the user to reorder the columns as needed just by highlighting the column and dragging it to the desired location. Columns can be removed by clicking the Remove/Restore button on the grid; this opens a window where the columns can be dragged off the grid and the columns can be restored by dragging them back onto the grid.

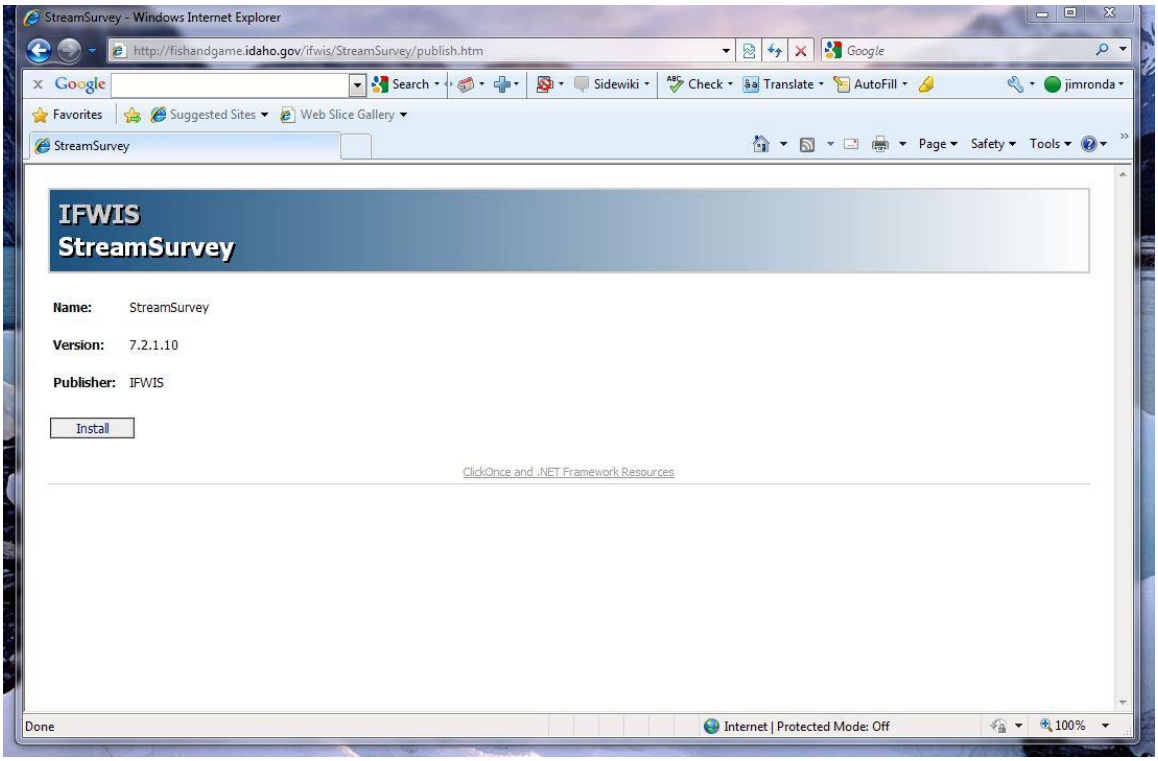


Figure 2. Stream Survey application installation page

These grids have a new delete button. To delete a record, the record must be selected and then click the Delete button. This prevents the accidental deletion of a record. Records can be sorted within any column.

The species list starts with the fish and amphibians that have been previously surveyed in the selected stream; this reduces the number of species in the drop down list for both Fish and Amphibian and the Results grids. New species can be added by clicking the Add Species button at the top of the form (discussed later) A dialog box open with the current species checked; check the species to be added. If the stream is new it will not have a pre-existing species list. The user must create the species as described for adding new species.

Opening Screen

The opening form has five buttons (Figure 3). The first button, 'Add or Edit Data', opens the Data Entry Form where data can be added or edited. The second button, 'Add or Edit Survey Site', opens the New Site Entry Form where new sites can be added or existing sites can be edited. The third button, 'View, Edit or Add Site Photos', opens the Photos Form where photos, maps and drawing may be added. The fourth button, 'Go To Web Reports, where data reports may be accessed. The fifth button exits the application.

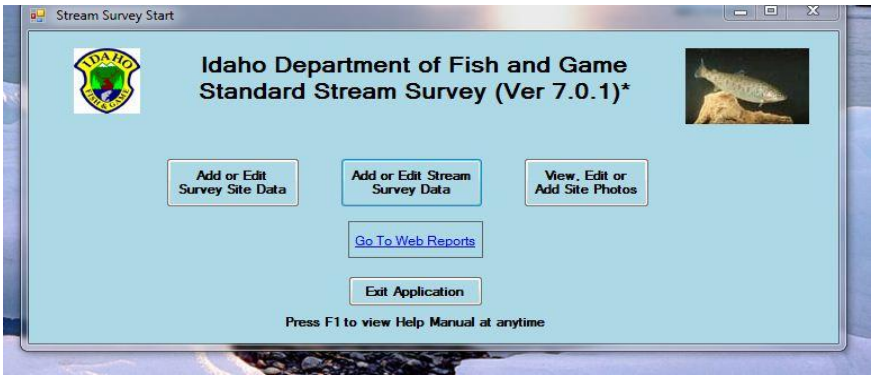


Figure 3 Open Screen for the Standard Stream Survey Application

Add or Edit Survey Site Data

The Add/Edit New Site Form can be opened by clicking the Add or Edit New Survey Site Data button on the opening screen (Figure 3). All survey sites must be entered using this form. You cannot enter data for a survey unless the survey site has been created or already exists.

Editing Existing Site Data

To make changes to existing survey sites click the 'Add or Edit Survey Site Data' button on the main Data Entry Form to open the Edit or Add Site Form (Figure 4).

1. **Click** the Edit Existing Site button at the top of the form.
2. **Click** and select a stream from the 'Stream' drop down box.
3. **Click** and select a stratum from the 'Stratum' drop down box.
4. **Click** and select a site from the 'Site' drop down box. The list of sites is limited to the sites within a stream and stratum.
5. Make Changes to existing data as needed.
6. **Click** the 'Save Record' button to save changes.
7. Select another site from the same stratum or select a different stream and repeat steps 2 and 3.

Adding a New Study Site

Click the 'Add New Sites' button at the top of the form to add a new study site. The top three fields are grayed-out and two new fields appear, 'Drainage' and Stream (Figure 5). Click the 'Drainage' drop down box and select a drainage. This will limit the selection of streams in the 'Stream' drop down box to those in the drainage. Click the Stream drop down box and select the stream where you want to add a new site. Fill in the remaining fields. The 'Stratum' field requires an entry; -99 should be used as a default. The 'Site' field must have a name that is unique to that stream; a descriptive name will help identify it later.

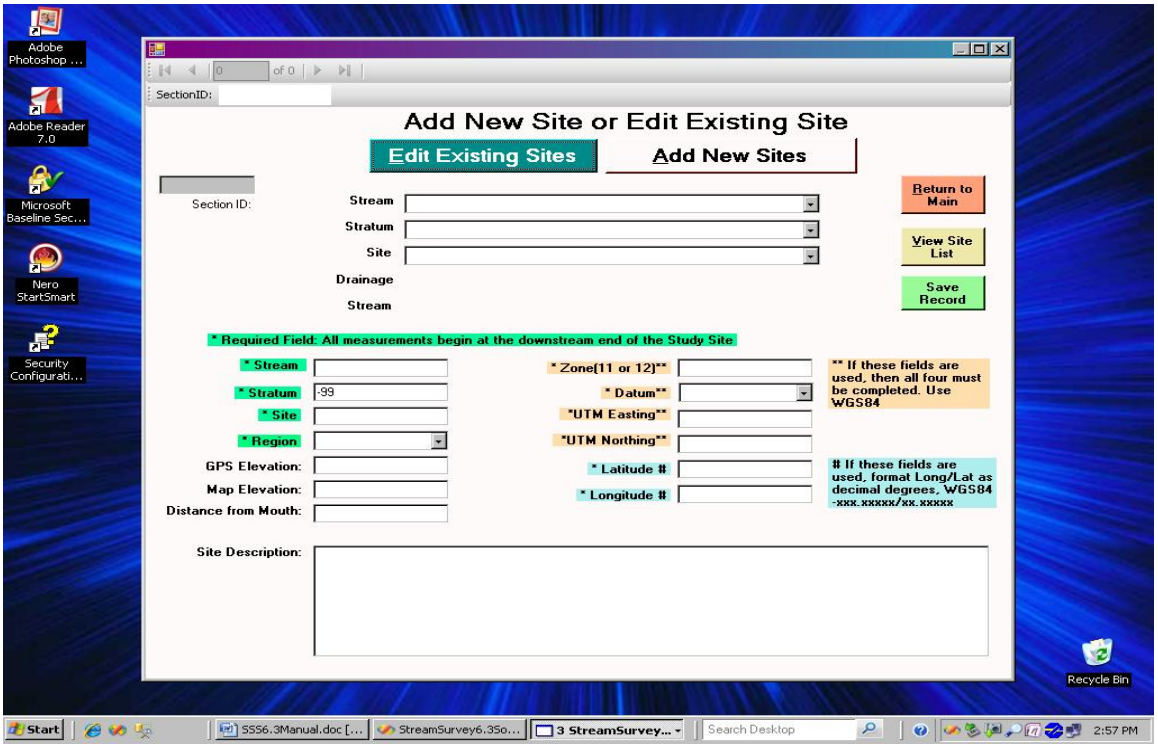


Figure 4. Add New Site form for the Standard Stream Survey Application in edit mode.

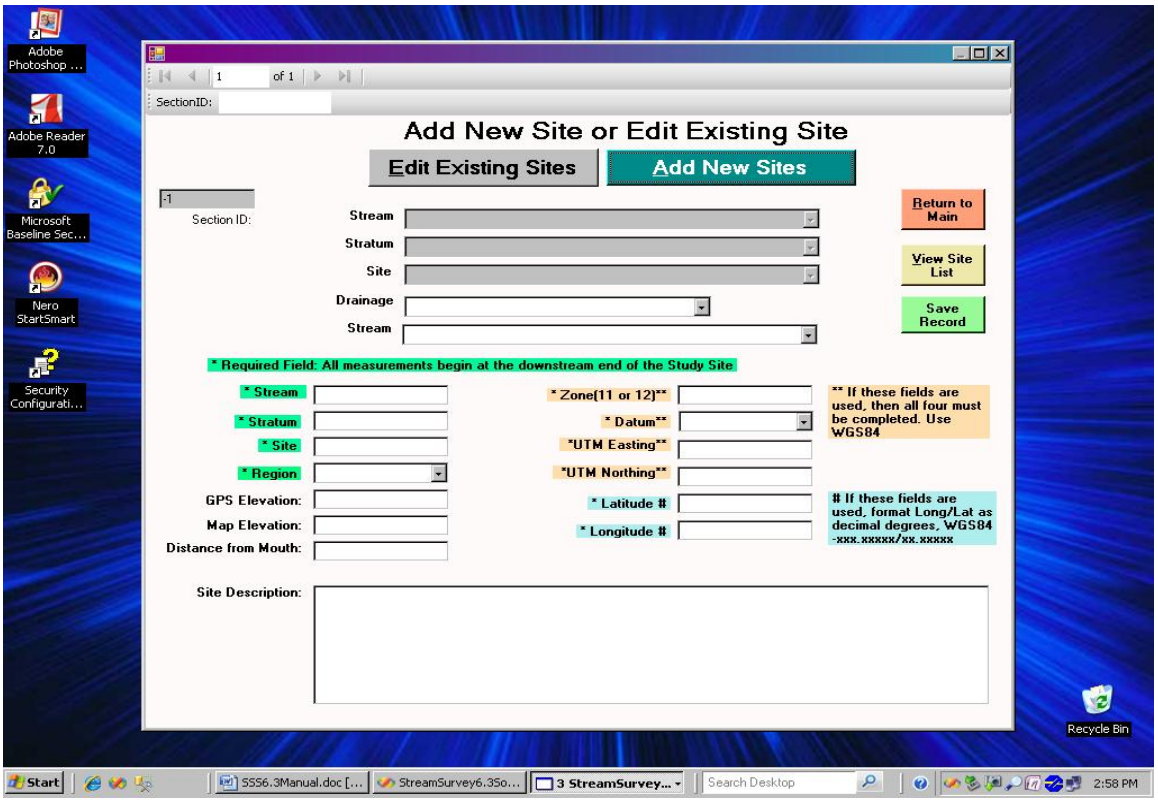


Figure 5 Add New Site form for the Standard Stream Survey Application in add mode

Location information is required. Select the Region from the drop down box. This is an important field to be completed. It helps with filtering data for reports on sites from a region. There are two choices for coordinate location; 'Latitude' and 'Longitude' or UTMs. Latitude and Longitude locations need to be entered as decimal degrees. There are four fields that must be entered if you choose UTMs; 'Zone (11 or 12)',' Datum' (the recommended datum is WGS84), and 'UTM Easting' and 'UTM Northing'. The coordinate fields, latitude, longitude, UTM Easting and UTM Northing use a specified format in the data entry box; it is necessary to follow the format accurately. Click the 'Save Record' button to save the new site data. To add additional sites click the 'Add New Site' button for each new site. A list of the current sites located on the selected stream can be viewed by clicking the 'View Site List' button.

Add or Edit Survey Data

Clicking the 'Add or Edit Stream Survey Data' button on the opening screen (Figure 1) opens the survey data entry form. This form has two functions (Figure 6). First, previously entered data may be edited if it is less than three years old. Second, new data may be added. Several steps must be followed before data can be edited or new data can be entered. Editing existing data will be discussed first. The data in the top part of the form is the 'Survey Data'. Attached to each 'Survey Data' record are the Fish and Amphibian Data, Stream Survey Habitat Data, Pop Estimate Data, and the Natural Habitat Data records in the lower portion of the form.

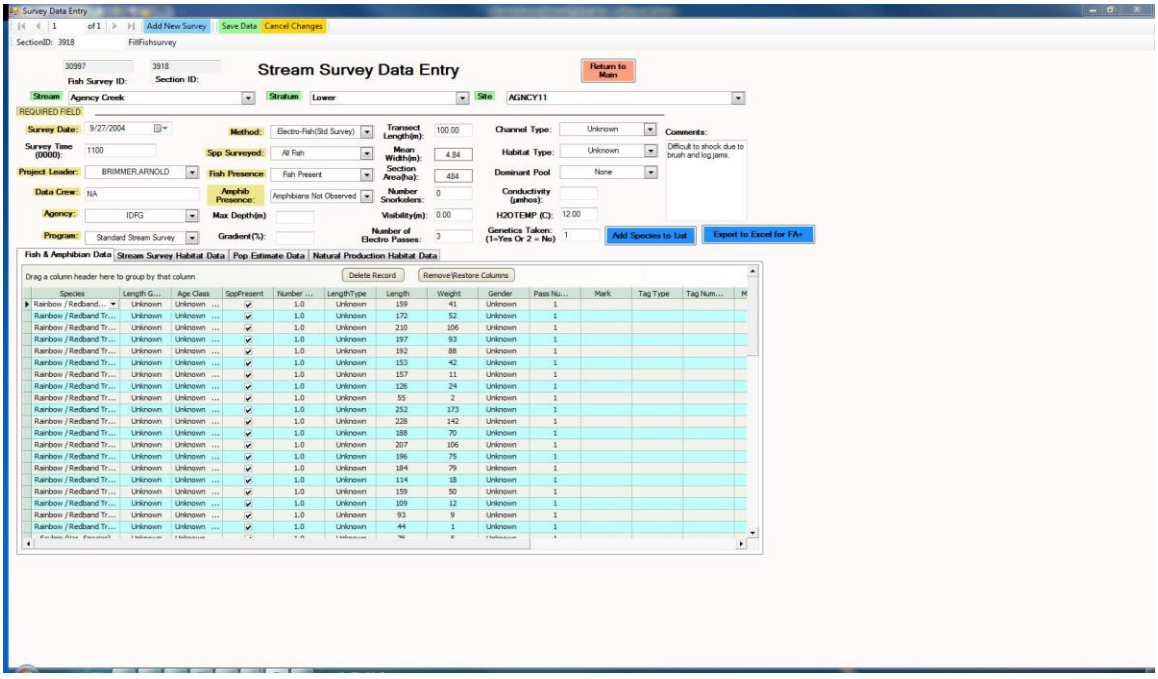


Figure 6. Survey Data entry form for the Standard Stream Survey Application.

Adding New Fish or Amphibian Species

The species list starts with the fish and amphibians that have been previously surveyed in the selected stream; this reduces the number of species in the drop down list for both Fish and Amphibian and the Results grids. New species can be added by clicking the Add Species button above the data entry tabs (Figure 6). A dialog box opens with the current species checked; check the species to be added. If the stream is new it will not have a pre-existing species list. The user must create the species as described for adding new species.

When complete, click the 'Submit Species List' button in the dialog to re-create the species list. **DO NOT UNCHECK THE EXISTING SPECIES AS THIS WILL AFFEECT THE DISPLAY OF OLDER RECORDS.**

Editing Existing Survey Data

Step1. Select a stream from the "Stream" drop down box (Figure 6). The box contains a list of the streams in Idaho that have been surveyed.

Step 2. Select a stratum from the "Stratum" drop down box (Figure 6). This box contains a list of strata for the stream selected above.

Step 3. Select a site that has been already created from the "Site" drop down box (Figure 6). This box contains a list of the sections or sampling sites in the stratum selected above.

**If the stream, stratum and/or site you are looking for is not in the list, this means they have not been added to the database, return to the Main Form and open the Add or Edit Survey Site, click the button to open the Edit/Add New Survey Site form and create the new site.

After completion of step 3 all the data pertaining to the selected stream sampling site is available in the form for review or editing. **Only records less than three years old may be edited here. Records older than three years may be edited by the Database Administrator only**. The records are filtered by stratum, by site and by date in an ascending order. The user may scroll through the records by clicking the navigation buttons at the top left of the form (Figure 6). Changes may now be made to any survey within any of the site. The ability to delete existing survey records will be restricted to the project leader or their designee. The project leader can add a new designee by contacting the database administrator (currently Jim Davis)

****IMPORTANT**** When editing preexisting data use "Unknown" for Project Leader and 'NA' Data Crew fields if these fields are blank to start. When the edits have been completed for each site, the user must click the "Save Data" button at the top of the form to save the changes (Figure 6) before selecting a **new site** or closing the application. The

user may manually cancel all changes by clicking the "No" button on the Save Record dialog when it appears.

Adding New Survey Data

Several steps must be completed before new Survey data may be added to the database.

Step1. Select a stream from the "Stream" drop down box (Figure 6). The box contains a list of all the streams in Idaho that have been surveyed.

Step 2. Select a stratum from the "Stratum" drop down box (Figure 6). This box contains entire list strata for the stream select above.

Step 3. Select a site from the "Site" drop down box (Figure 6). This box contains a list of the sampling sites in the stratum selected above. If no surveys exist the Add New procedure automatically fires and the Survey Date field has focus. The user must enter the date the survey was completed.

Step 4. If surveys exist for the selected site the user must click the "Add New" button, at the top of the form to begin a new survey. This happens when a site has been previously surveyed and the user wishes to enter data for a new survey of that site.

The following fields must have data before the record can be saved; 'Project Leader', 'Data Crew', 'Collecting Agency', 'Program', 'Sample Method', 'Fish Species Surveyed', 'Fish Presence', and 'Amphibian Presence'. 'Mean Width' is a calculated field. Width measurements are entered in the Stream Survey Habitat Data or Natural Production Habitat Data dataGrid. 'Section Area' is a calculated field and requires an entry in the Survey Site Length' field and the 'Mean Width' field; the Section Area value will also be calculated using the Visibility value and the number of snorkelers if both of these values are present and the type of snorkeling method used (view one direction or view both directions) in place of the mean width. The 'Percent (%) Gradient' field can be a calculated value or directly entered. To calculate the % Gradient the 'Survey Site Length' field must have a value entered and the 'Vertical Drop' column in the Stream Survey Habitat Data dataGrid must have values. Equations for these fields can be found in Appendix A. Appendix A contains a list of fields and what data can be entered in the entry box.

Editing or Adding New Fish and Amphibian Data

When steps one through three or four (above) have been completed new fish and amphibian data, habitat data, and result data may be added or existing data edited. Fish data can be found in the tab labeled "Fish and Amphibian Data" (Figure 6). Column headings should be self explanatory on where to enter data on fish lengths, weights etc. To edit, put the cursor in the desired cell and make the necessary changes. To add a new record, move the cursor to the blank row at the bottom of the dataGrid and fill in the desired columns. Several columns are drop down boxes and entries are limited to the list

in the box. Begin typing the value you want and it will automatically scroll down to the correct entry. Columns with repeating data are set up for default values to reduce data entry time. Fields may be expanded to see the entire entry by dragging the column border (in the header) to desired width or double clicking in the header as in Excel. Fish and amphibian records can be copied from the grid to an excel spread sheet. If you put the cursor in the small column at the left edge of the grid and drag it down the record become highlighted. To copy the records, hold the 'Control Key' and press the 'c' key. Then open an Excel spread sheet, put the cursor in the upper left column right click and select paste to copy the records into the spread sheet. The one disadvantage to this method is the columns headings are not copied. But this is a quick way to get a copy of the fish data for analysis.

Editing or Adding New Habitat Data Records

Follow the same steps listed above to edit or add records to the Stream Survey Habitat Data tab (Figure 7).

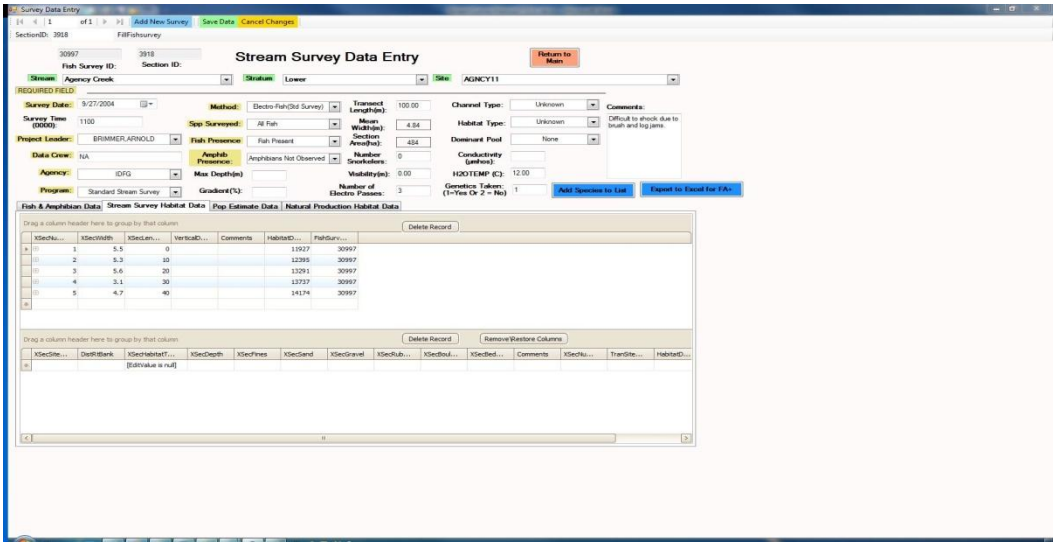


Figure 7. Main data entry form showing records in the Transect and Cross Section dataGrids.

The Stream Survey Habitat Data has two dataGrids. The top dataGrid contains data on the cross section width, distance upstream from the bottom of the study site of the current transect, vertical drop, and comments established in the study site. Values entered into the width column are averaged and this value is entered automatically into the 'Mean Width' field in the top portion of the form (Figure 7); it is grayed-out and cannot be edited. The Section Area is calculated using the values from the 'Mean Width' and 'Survey Site Length' fields. Values entered into the 'Vertical Drop' column are used to calculate the percent gradient and is entered automatically into the 'Gradient' field in the top portion of the form (Figure 7). To calculate the % Gradient the 'Survey Site Length' field must have a value entered and the 'Vertical Drop' column in the Stream Survey Habitat Data dataGrid must have values for all transects. Alternatively, Gradient may be

measured in the field or taken from a map and entered directly in the Gradient field on the form. Equations for these fields can be found in Appendix A.

Data in the lower dataGrid pertains to data collecting along the Transect, Site Number, Distance from the Right Bank, Habitat Type, Depth, and the percentage of various substrate types (Fines, Sand, Gravel, Rubble, Boulders, and Bedrock).

The data in the bottom grid is related to the record that is selected in the upper grid (arrow on left side of the record). For example, depth, distance from right bank, and substrate measurements are likely to be made for each transect (cross section). The 'XSectionNumber' in the bottom grids refers to the 'XSectionNumber' in the upper grid. The 'XSecSiteNumber' refers to the site where the depth, substrate measurement are made. Data in these dataGrids can be edited or new data added. To edit, put the cursor in desired cell and make the necessary changes. To add a new record, move the cursor to the blank row at the bottom of the dataGrid and fill in the desired columns. Several columns are drop down boxes and entries are limited to the list in the box. Columns with repeating data are set up for default values to reduce data entry time. Fields may be expanded to see the entire entry by dragging the column border (in the header) to desired width or double clicking in the header.

Editing or Adding Pop Estimate Data

The data in the "Pop Estimate" tab (Figure 8) are summarized population data derived from third party fish population estimating software. The data includes: Population Method (e.g. mark/recapture, depletion, etc.), Method Type (e.g. multipass depletion, Modified Peterson, etc.), Software used (Microfish, MR5, and FA+ etc.), Species, length group, and several statistics pertaining to the population estimate.

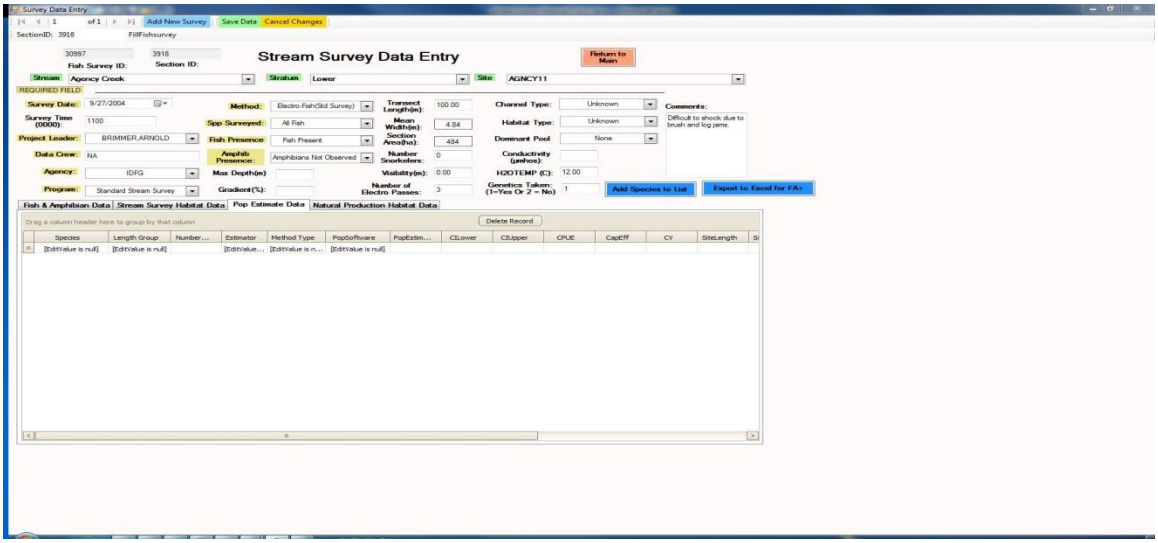


Figure 8. Main data entry form showing records in the "Pop Estimate Data" tab.

****IMPORTANT**** When all new records and edits have been completed for each site the user must click the "Save Data" button to save the changes before selecting a **new site** or closing the application.

Editing or Adding Natural Production Habitat Data

The "Natural Production Habitat Data" tab is new and reflects the changes in habitat data collected (Figure 9). The data in the top dataGrid pertains to data collected at the transect site; XSection Number, Distance from Bottom of the study site, Width, Max Depth, the Dominate Habitat Type, 6 substrate types, three depth measurements taken at ¼, ½, and ¾ of the distance across the stream, and comments. The data in the second dataGrid pertains to measurements (overhang and undercut) taken of the left and right stream banks.

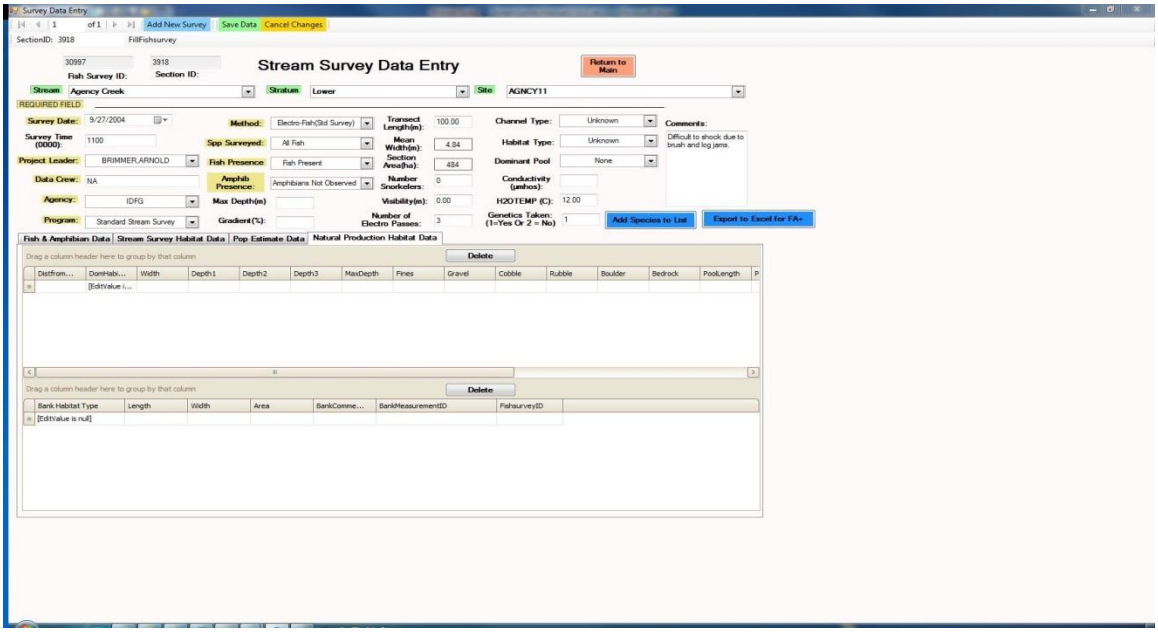


Figure 9. "Natural Production Habitat Data" tab.

View, Edit, or Add Site Image

The fourth button, "View, Edit, or Add Site Photos" (Figure 3) open a form that allows the user to view, edit, or add digital photos, or scanned maps, documents, photos, or drawings. It is recommended for space and site maintenance that the number of pictures etc per site be limited to five. All pictures must have a unique name and must be named prior to adding to the database.

Adding New Image

Images are added to an existing study site. Select the study site by making selections in the top three drop-down boxes (Figure 10). Then click the 'Add New' button to open a dialog box that allows the user to select the picture from an existing file. Upon selection,

the picture appears in the picture box; the file name appears in the 'Image File Name' field and is not editable; the source of the picture appears in the 'Local Image File Name' field. Select a date from the 'Image Date' then fill in the 'Image Description' field. You must click the 'Save' button before being allowed to add a new image. Pictures can be replaced by deleting the existing image, click the 'Delete' button, and then adding a new picture. The image may be printed by clicking the 'Print' button.

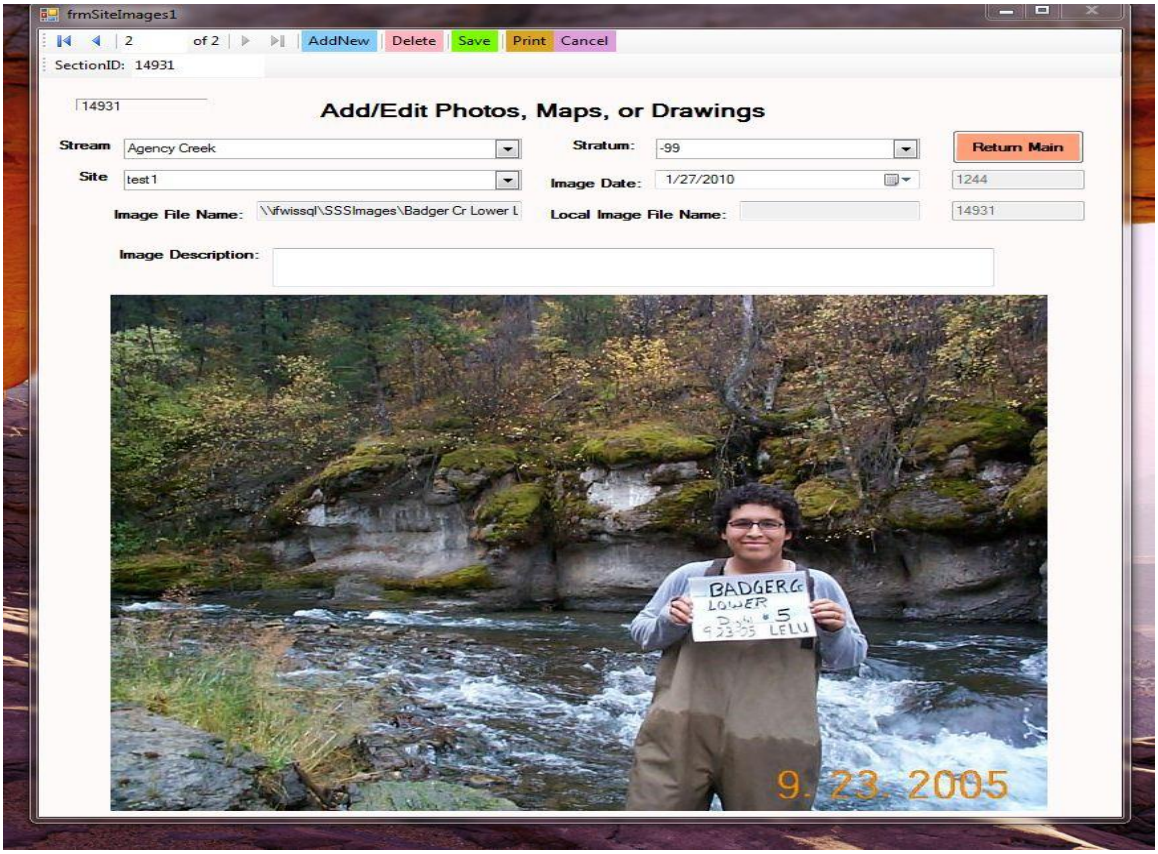


Figure 10. Add or Edit Photos, Maps, Documents entry screen.

Retrieving Data

Clicking the 'Go To Web Reports' button on the opening screen (Figure 1) will take you to the Stream Survey web reports page where the data be retrieved. The first screen to pop up is the login page (Figure 10). The user name is "partner" and the password is "fishdata". These reports are available to the public by giving them the URL: http://fishandgame.idaho.gov/ifwisparts/Pages/ReportViewer.aspx?%2fStream+Survey+Reports%2fStream+Survey+Reports+IFWIS&rs:Command=Render .

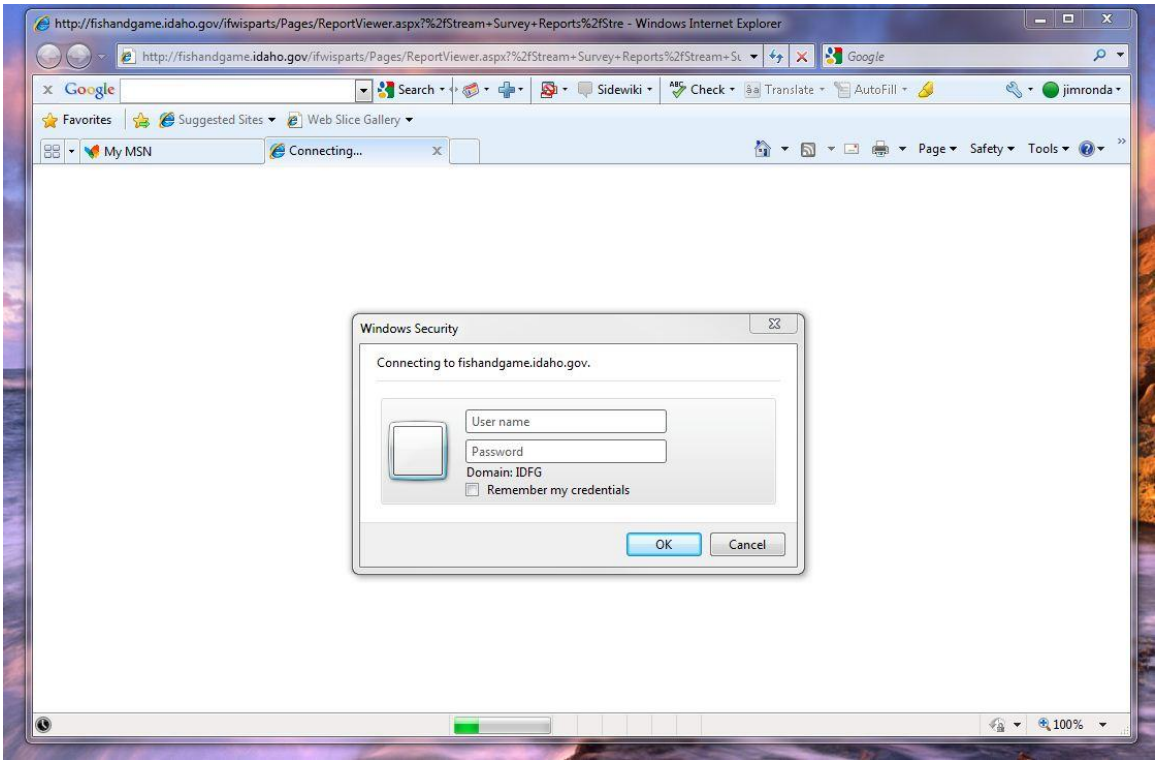


Figure 10. Retrieve Data Form

After entering the login information the second screen opens that allows the user to select values for the parameters (Figure 11).

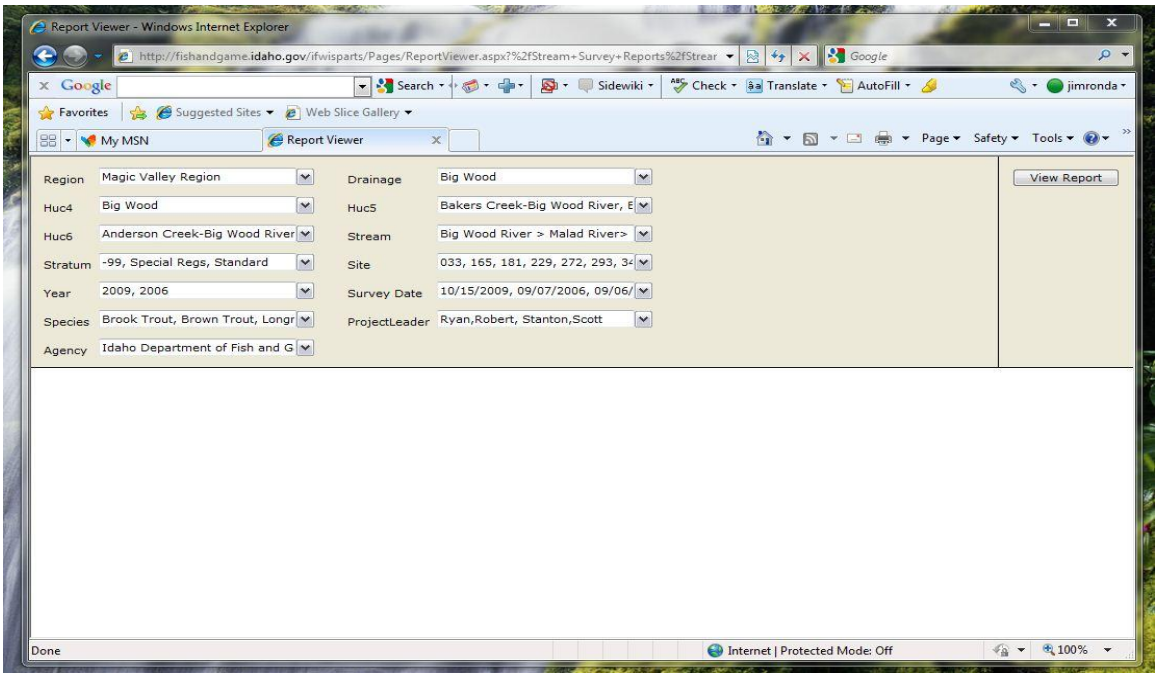


Figure 11. Parameters page for Stream Survey Web Reports with parameters selected.

All the parameters must have a value. The user can choose to ‘Select All’ or as many individual selections for each parameter by checking the box on the left of the selection. After the parameters have been selected the user clicks the ‘View Report’ button on the right side of the page. This sends the data request to the database; when the data have been returned a form with report selections appears (Figure 12).

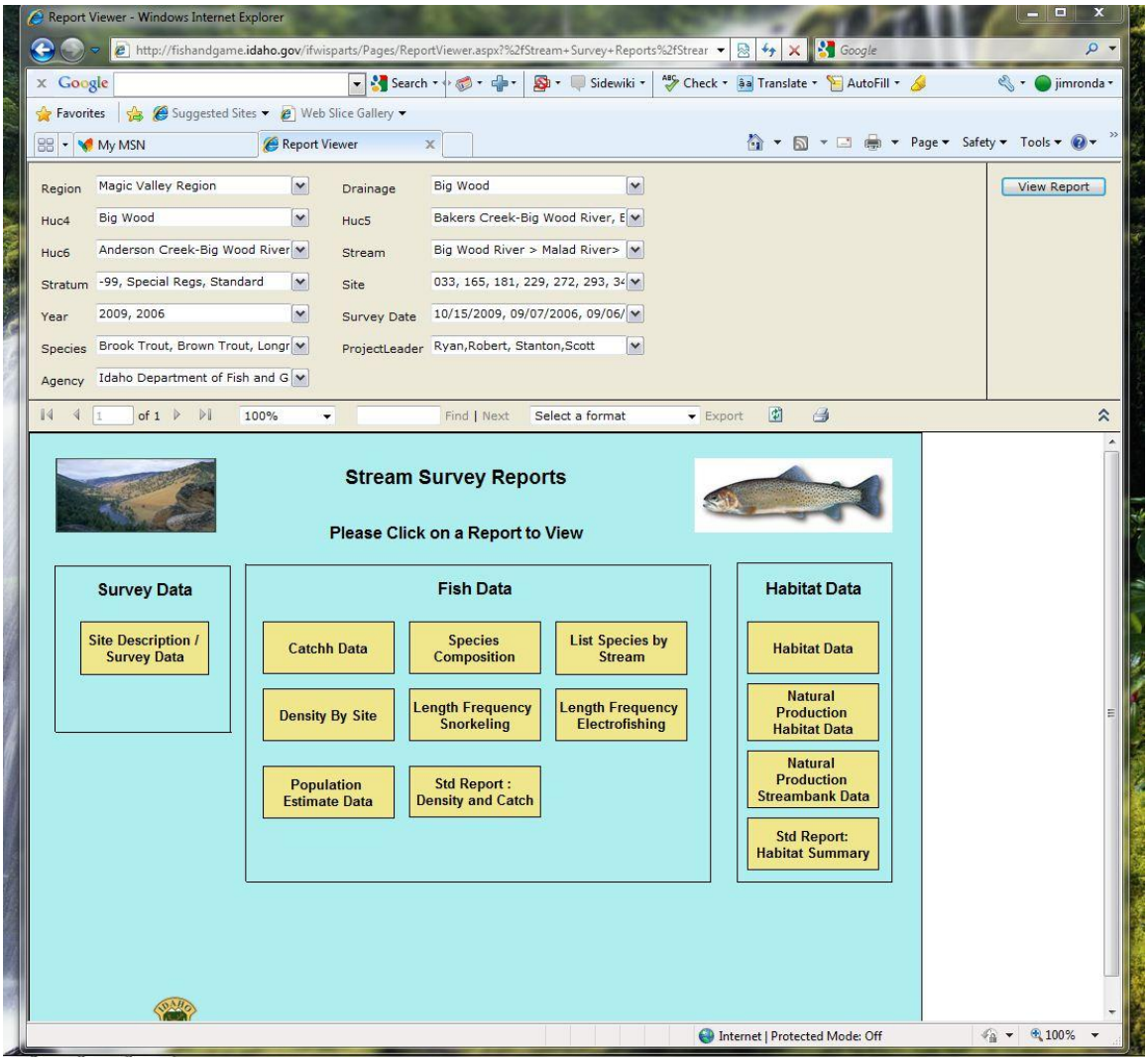


Figure 11. Stream Survey Web Report selections.

The now chooses which report to open by clicking the button. More reports will be added as necessary.

Citrix Server Version

The Standard Stream Survey Application on the Citrix is intended for biologists who do not have direct access to our network or choose to work at home. Applications on the Citrix Server work a little differently than on your own computer. When you are on the

Citrix Server you do not have access to your C:\ drive and the O:\ drive (IDFG personal network drive) takes the place of the C:\ drive. There are two major differences between the Citrix Version and the network version. If you want to save pictures, drawings, etc. they must be on the O:\ drive prior to saving them in the application. When you download data through the application, the files will be saved on your O:\ drive in the 'SSSFiles' folder. The remainder of the application functions the same as the network version. If you need access to the Citrix version let Jim Davis know and your name will be added to the list.

Using FA+ Fish Population Software

FA+ software allows MSExcel spreadsheets to be imported into the application to avoid duplicate data entry, provided the column names and data types correspond to the format required by FA+. In the Stream Survey application will populate a spreadsheet designed to be imported into FA+. The spreadsheet is populated by clicking the blue button, "Export to Excel for FA+", in the right center of the Survey entry form. The data used to populate the spreadsheet can be observed in the "Fish & Amphibian Data" tab**.** A spreadsheet appears a few minutes **a**fter clicking the button with the data.

The spreadsheet is a read-only file, so the user must save the file with a different name in a folder of their choice. After saving and closing the spreadsheet, the user can import the file directly into FA+. To do this, the user starts FA+, clicks on 'Maintenance' in the toolbar and selects Import Selection, select Excel spreadsheets, and G and E file. Then navigate to the folder where the exported Excel file was saved, select the file from the box on the right and then click view. In the Import G-file and E-file dialog box, type six digits into the collection code field, (e.g.123456; the numbers are unimportant but cannot be repeated for any other file); and type a meaningful name in the 'Section Name' field and then click the Import button.

Appendix A. Data Fields

"Add or Edit Survey Site Data"

1 **Edit Existing Sites** button – Click this button to edit sites
2 **Add New Sites** button – Click this button to add the first new site
3 **View Site List** button – Click this button to view a list of sites located on the selected stream (when in Add New Site mode).

These next three fields are used to select an existing Site.

4 **Stream** drop-down box – Select the stream where the desired survey site is located.
5 **Stratum** drop-down box- lists the stratum from the above selected stream.
6 **Site** drop-down box- list the sites located within the selected stratum.

These next two fields are used to select the stream for a new Site.

7 **Drainage** drop-down box visible when adding a new survey site.
8 **Stream** drop-down box visible when adding a new survey site, contains a list of streams within the selected drainage

These next three fields are used to identify the site to edit or add.

9 **Stream** – This box fills in automatically and is not editable.
10 **Stratum *** - This field is required. Use words that will help identify the survey site location in relation to the entire stream. Example: Lower, Middle, Upper, 1, 2, 3, etc, -99 is the default value.
11 **Site *** - This field is required. Use words that will help to uniquely identify the sampling site.
12 **Region** drop down box – Select the IDFG Region where the site is located.
13 **GPS Elevation** – Enter the elevation of the site in meters as determine by a GPS unit.
14 **Elevation** – Enter the elevation of the site location in meters as determined from a map.
15 **Distance to Mouth (meters)** - Distance from the mouth of the stream to the downstream end to the study site. (Aids with location, used by GIS)
16 **Zone **** – This field is required (if Lat/Longs are not used). Idaho is divided into two zones, 11 and 12. Zone 11 is everything west of longitude 114° and zone 12 is everything east.
17 **Datum **** drop down box – This field is required (if Lat/Longs are not used). Select the datum used for determining the UTM coordinates. The standard datum is currently WGS84.
18 **Easting UTM **** - This is a required field (if Lat/Longs are not used) containing 6 digits.
19 **Northing UTM ** -** This is a required field (if Lat/Longs are not used) containing 7 digits.
20 **Latitude *** - This is a required field if UTMs are not used. Use decimal degrees.

21 **Longitude *** - This is a required field if UTMs are not used. Use decimal degrees.

22 **Save Record** button – Clicking this button saves the record to the database.

23 **Return Main** button – Closes form and returns to the Main Form

*The location of the site must be recorded using Distance from the Stream Mouth or UTM or Lat/Long. **If UTMs are used then the Zone field must be completed. the Datum fields must be completed for both types of coordinates.

Main Data Entry Form (* indicates Required Field)

1 **FishSurveyID** – In the upper left hand corner is read only and are useful in identifying the correct record in queries and reports.

2 **SectionID -** In the upper left hand corner is read only and are useful in identifying the correct record in queries and reports.

3 **Stream** drop down box – The box contains a list of all the streams in Idaho that have been surveyed.

4 **Stratum** drop down box - This box contains a list of all the stratum for the stream select above.

5 **Section** drop down box - This box contains a list of the sections or sampling sites in the stratum selected above.

6 **Survey Date*** – Enter the date the survey was completed**.**

7 **Survey Time** – Enter the time (military) the survey was conducted.

8 **Project Leader *** - This is a required field so questions about the data can be directed to the biologist responsible for the data set.

9 **Data Crew *** - This is a required field and contains the names for people who worked on the site.

10 **Agency** drop down box – Select the Agency the Project Leader worked for at the time the data was collected. For example if the person worked for IDFG then the entry would be IDFG.

11 **Program** drop down box – Select the program the site data is needed by. For example if the data collected was for General Parr Monitoring then the entry would be General Par Monitoring.

12 **Method *** drop down box – Select the type of sampling used to survey the fish population in the site. If snorkeling is selected then 'Length Group' and 'Age Group' columns are visible otherwise they are hidden.

13 **Spp Surveyed *** drop down box – There are two choices, All Species and Selected Species. If 'All Species' is the selection, then enter all the fish data for fish observed and sampled. It will be assumed that any fish not appearing in the dataGrid were not observed. If 'Selected Species' is the selection then data must be entered for all the fish species that were looked for even if no fish are observed. It will be assumed that fish that are not in the dataGrid were not targeted for observation.

14 **Fish Presence *** – There are two selections, Fish Present or Fish Not Present.

15 **Amphibian Presence *** – Three selections, Amphibians Observed or Amphibians Not Observed, or No Information.

16 **Max Depth (m)** The deepest measurement for the reach surveyed.

17 **Gradient (%)** – This can be a calculated field (Sum vertical drop measurements/ Survey Site Length)*100, **o**r **e**nter the gradient directly as a percentage.

18 **Transect Length (m)** - Enter the measurement in meters.

19 **Mean Width (m)** - This is a calculated field. Individual width measurements are entered in the Transect Data dataGrid in meters, ((w1 + w2 + w3 etc)/count of width measurements).

20 **Section Area (m^2)** - This field is automatically filled and is expressed as square meters. (Survey Site Length/ Mean Width)

21 **Number of Snorkelers** – Enter the number of observers.

22 **Visibility (m)** – Distance the snorkeler can see through the water.

23 **Number of Electro Passes** drop down box – Enter the number of passes used to collect fish. If it a mark-recapture use 'Marking Run' for marking run and 'Recapture Run' for the recapture run.

24 **Channel Type** – Based on Rosgen's channel type classification.

25 **Habitat Type** drop down box – Select the habitat for the sampling site. If the site contains more than one habitat type select the 'Combination' habitat type.

26 **Dominant Pool** Select the feature that creates the dominant pool in the reach surveyed.

27 **Conductivity (µ/cm)** – Enter the specific conductivity (µs/cm) of the water at the sample site.

28 **Water Temperature** – enter the water temperature at the start of the survey in Celsius.

29 **Genetics Taken** – If a genetic sample was taken from any of the fish in this survey, then check the box. This is a check box a dark check is yes, a blank box is no, and a grayed-out check is the default null.

30 **Comments** – Add any information you think is needed.

Fish and Amphibian Data Tab

This is a data grid. All fish records associated with the current site and date are visible.

1. **Species** drop down box – This is a required field. Select the species from the list. This column will default to the last selection of the current session (default value field). If the list is incomplete contact the Fishery Data Coordinator.
2. **SppPresent** – Check the box if the only thing that is recorded is presence. It is visible when 'Selected Species' is the selection in the **Fish Species Surveyed** field.
3. **Length Group** drop down box – Select the length group observed. Generally used for snorkeling observations. Visible only if snorkeling is the selected method.
4. **Age Class** drop down box – Select the age group of the fish observed. This field is generally used for Salmon fish species. Visible only if snorkeling is the selected method.

5. **Number Counted** – Enter the number of fish observed in the selected length group or age group above**. Include fish counted and not measured.**
6. **Length Type -** drop down box– Select the type of individual length recorded e.g. total, fork etc. Default value field
7. **Length** –Length of the fish in millimeters, typically used for non-snorkeling data.
8. **Weight** - Enter total wet weight in grams, typically used for non-snorkeling data.
9. **Gender** drop down box– Three choices; male, female, and unknown.
10. **Pass Number** drop down box - Select the pass number for a multiple pass electrofishing survey or select pass type e.g. Marking Run, Capture Run for Petersen Population sampling.
11. **Marks** - drop down box – Select the mark used, if any, to identify the fish. Default value field
12. **Tag Type** drop down box – Select the type of tag used, if any, to identify the fish. Default value field
13. **Tag Number** – Enter the tag number
14. **Mortality** – Check this box if the fish was a mortality. This is a check box where a dark check is yes, a blank box is no, and a grayed-out check is the default null
15. **Recap** – Check this box if the fish was recaptured on the 'Capture Run' of a Petersen-type population sampling scheme. This is a check box where a dark check is yes, a blank box is no, and a grayed-out check is the default null
16. **Genetic fish** – If a genetic sample was taken from this fish, then check the box. This is a check box where a dark check is yes, a blank box is no, and a grayed-out check is the default null.
17. **Comments** – Enter as much pertinent information as needed.
18. **FishDataID –** Is an auto filled boxed that can be used to identify an individual fish.
19. **FishSurveyID –** Is an auto filled box and ties the fish record to the survey record.

Stream Survey Habitat Data Tab

1. **XSecNumber** – Enter the number of the cross section being measured. Begin with the lowest number at the downstream end of the sampling site. Default value field.
2. **XSecWidth**– Enter the width of the cross section in meters. Default value field
3. **XSecLength Bottom**– Enter the distance, in meters, of the cross section to the downstream end of the sampling site. Default value field.
4. **Vertical Drop**– Enter the height the XSec drops from current XSec to the next XSec downstream in meters. Default value field. May be left blank.
5. **Comments** – Enter as much pertinent information as needed.
6. **HabitatDataID** – Identifies the Habitat record and is auto filled.
7. **FishSurveyID -** an auto filled box and ties the habitat record to the survey record.

Lower Data Grid. The Cross Section Habitat Data dataGrid; records visible in this grid are associated with the selected record in the Transect Data dataGrid through the XSecNumber.

8. **XSecNumber** – Enter the number of the site being measured; for width beginning with the lowest number on the right side looking upstream.
9. **XSecSiteNumber –** The site of measurements taken across the transect.
10. **RtBank** – Enter the measured distance of the measurement site to the right bank (looking upstream). When this site is surveyed again, the same site can be located, measured, and compared for changes.
11. **XSecHabitatTypes** drop down box – Select the type of habitat at the point the measurements are being taken. This entry should be a single type.
12. **XSecDepth**– Enter the depth in meters.
13. **XSecFines** - Enter the percentage of sand, < 0.6 mm, at the measurement site. Typically the percentage is estimated using a grid.
14. **XSecSand** - Enter the percentage of sand, 0.6 – 2 mm, at the measurement site. Typically the percentage is estimated using a grid.
15. **XSecGravel** - Enter the percentage of gravel, 2.0-64 mm, at the measurement site. Typically the percentage is estimated using a grid.
16. **XSecRubble** - Enter the percentage of rubble/cobble, 64-256 mm, at the measurement site. Typically the percentage is estimated using a grid.
17. **XSecBoulders** - Enter the percentage of boulders, 256-4,096 mm, at the measurement site. Typically the percentage is estimated using a grid.
18. **XSecBedrock** - Enter the percentage of bedrock, > 4,096 mm, at the measurement site. Typically the percentage is estimated using a grid.
19. **Comments** – Enter as much pertinent information as needed.
20. **TransectDataID** – An auto filled number that identifies the record.
21. **HabitatDataID** – Identifies the Habitat record and is auto filled.
22. **FishSurveyID -** an auto filled box and ties the habitat and transect records to the survey record.

Pop Estimate Data

1. **Species** - Select the species or group for species (e.g. all fish or all salmonids) from a drop-down box.
2. **Length Group** – Select the length group (100 mm intervals) from a drop-down box.
3. **Number Observed –** Enter the number of fish measured.
4. **Estimator** – Select the general type of population estimate method (e.g. mark-recapture or depletion) from a drop-down box.
5. **Method Type** - Select the specific population estimate method (e.g. single pass, multipass depletion, Modified Peterson etc.) from a drop-down box.
6. **PopSoftware** – Select method of calculating the estimates (software used, or calculator or spreadsheet etc.) from a drop-down box.
7. **PopEstimate –** Enter the calculated population estimate for the reach you sampled. NOTE: this is not a density estimate, it is just the actual abundance which will be used to calculate density by combining the abundance with linear or areal distance covered to produce density/m^2, density/m, etc

8. **CILower -** Enter the calculated lower 95% confidence interval for the population estimate for the reach you sampled.
9. **CIUpper -** Enter the calculated upper 95% confidence interval for the population estimate for the reach you sampled.
10. **CPUE –** Catch per unit effort in hours.
11. **CapEff** – Calculated capture efficiency from your electrofishing depletion or mark-recapture data.
12. **CV (Coefficent of Var) –** Calculated coefficient of variation from your electrofishing mark-recapture data.
13. **Comments** – Enter all pertinent information.
14. **PopID** – An auto filled number that identifies the record.
15. **FishSurveyID -** an auto filled box and ties the pop estimate record to the survey record.

View, Edit, New Site Photos Form

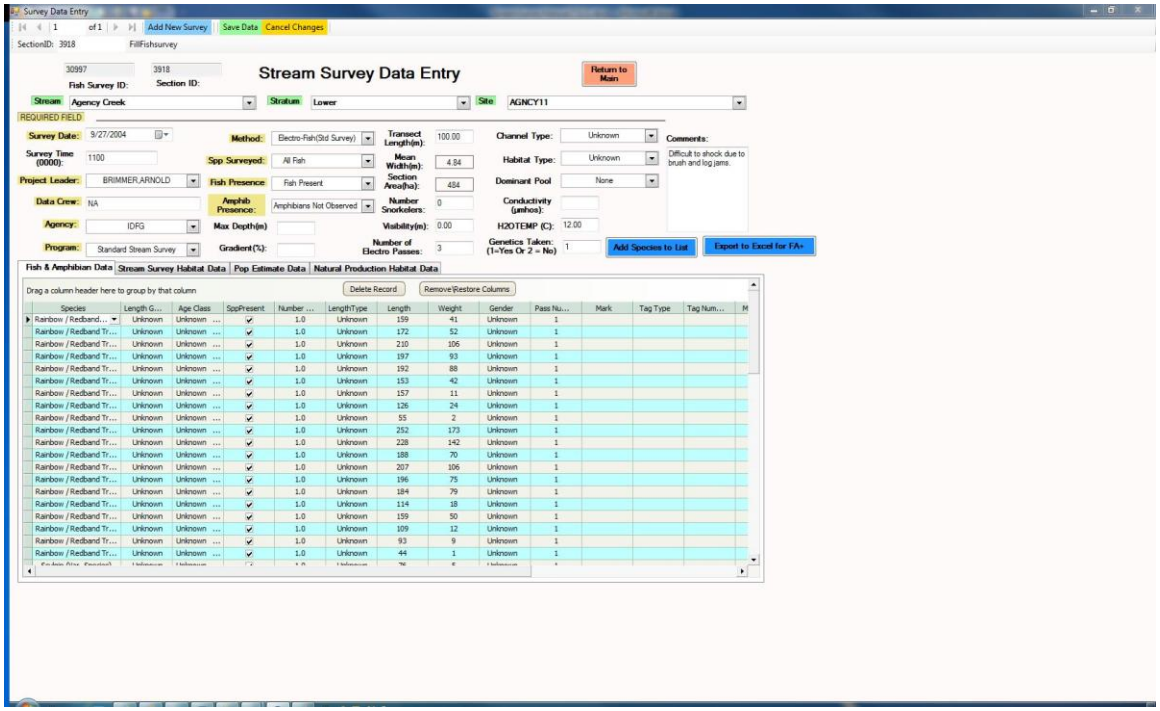
The top three fields are used to select an existing Site.

1. **Stream** drop-down box – Select the stream where the desired survey site is located.
2. **Stratum** drop-down box- lists the stratum from the above selected stream.
3. **Site** drop-down box- list the sites located within the selected stratum.
4. **Image Description –** Describe the photo, map or picture e.g. downstream end of study site.
5. **Image Date –** Select the date the photo was taken or map or drawing was made.
6. **Image File Name -** Automatically filled in. Recommend naming all photos, maps, and drawings prior to adding to the database.
7. **Local Image File Name –** Automatically filled in, this is the location of the photo, map, or drawing on the local hard-drive.

Buttons

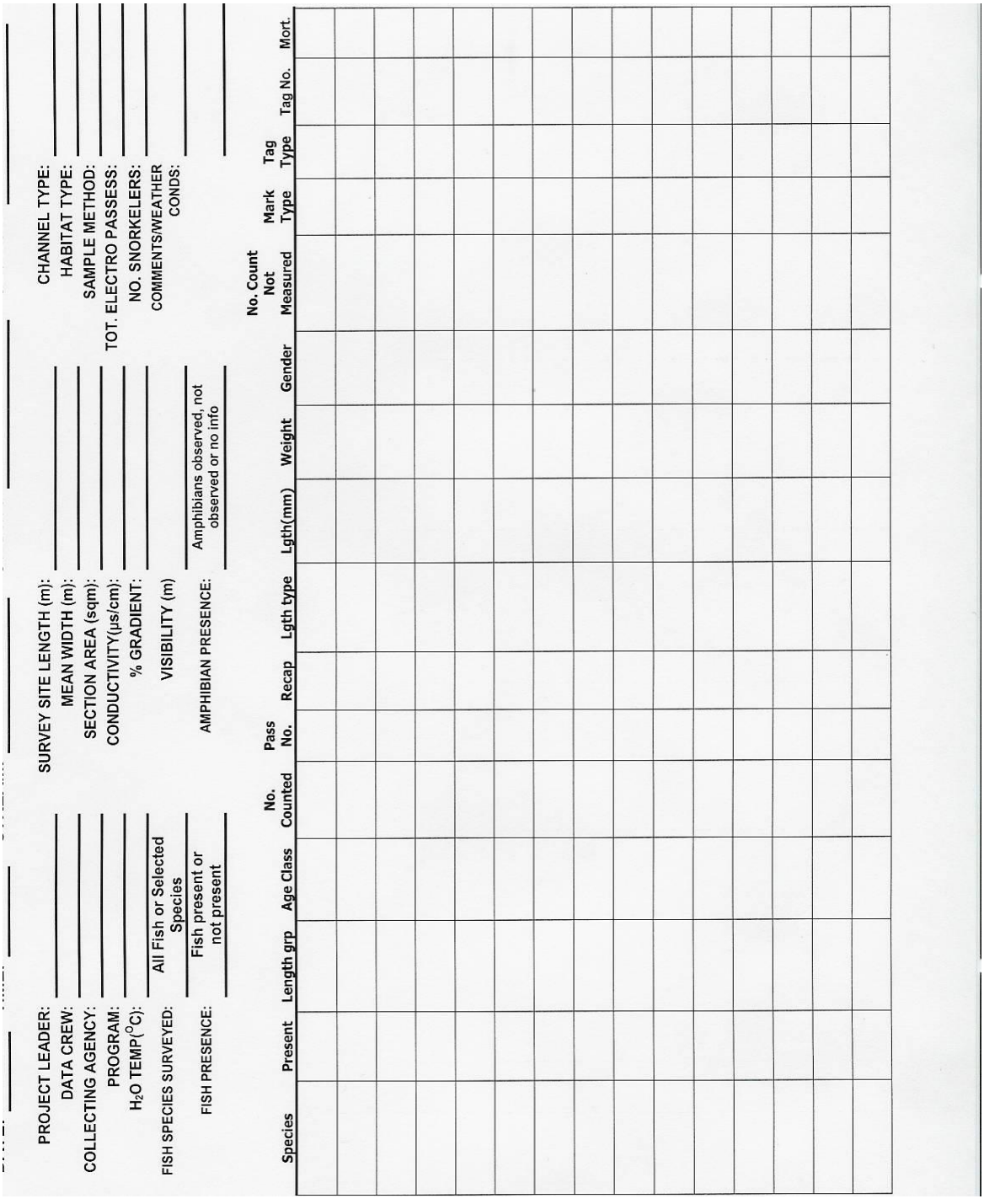
8. **Add New –** Click this button to prep the form to add a new photo etc.
9. **Delete –** Click this button to remove the current image.
10. **Save –** Click this button to save the image to the database.
11. **Print –** Click this button to print the current image to the default printer.

Appendix B. Sample Data sheets



The top portion of the sample field forms (below) corresponds to the top portion of the above form. The grid portion of the sample field forms (below) corresponds to the grids on the tabs in the lower portion of the above form.

Appendix B-1. Sample Fish Survey form with Fish Data Grid.



Appendix B-2. Sample Fish Survey form with Transect and Cross Section Data Grid.

PROJECT LEADER:
DATA CREW:
COLLECTING AGENCY:
PROGRAM:
H_2O TEMP(^{0}C):
FISH SPECIES SURVEYED: All Fish or Selected Species
FISH PRESENCE: Fish present or not present

SURVEY SITE LENGTH (m):
MEAN WIDTH (m):
SECTION AREA (sqm):
CONDUCTIVITY(µs/cm):
% GRADIENT:
VISIBILITY (m):
AMPHIBIAN PRESENCE: Amphibians observed, not observed or no info

CHANNEL TYPE:
HABITAT TYPE:
SAMPLE METHOD:
TOT. ELECTRO PASSES:
NO. SNORKELERS:
COMMENTS/WEATHER CONDS:

TRANSECT DATA

XSecNo.	XSeclength	XSecWidth (m)	Vertical Drop	Xsec Site No.	Dist. Frm Rt Bank(m)	Xsec Habitat type	Xsec Depth (m)	Xsec % Fines	Xsec % Sand	XSec % Rubble	XSec % Boulder	XSec % Bedrock

Appendix B-3. Sample Fish Survey form with different style Fish Data Grid.

DATE: _____ TIME: _____ STREAM: _____ STATION: _____

PROJECT LEADER: _____
DATA CREW: _____
.LECTING AGENCY: _____
PROGRAM: _____
H_2O TEMP(^{O}C): _____
TM COORDINATES: E _____ N _____

SURVEY SITE LENGTH (m): _____
MEAN WIDTH (m): _____
SECTION AREA (sqm): _____
CONDUCTIVITY(µs/cm): _____
% GRADIENT: _____
VISIBILITY (m) _____

CHANNEL TYPE: _____
HABITAT TYPE: _____
SAMPLE METHOD: _____
TOT. ELECTRO PASSESS: _____
NO. SNORKELERS: _____
COMMENTS/WEATHER CONDS: _____

(Circle one in each section) Fish Species Surveyed: All Fish or Selected Fish; Fish Presence: Fish Present or Fish Not Present; Amphibian Presence: Amphib Observed, Not Observed or No Information

INCH	Tourt Fry	STHD/RBT Natural/Wild	STHD/RBT Hatchery	Cutthroat Trout	Bull Trout	Mountain Whitefish	Brook Trout	Dace	Sculpin
<2									
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
>12									
CH 0						Coho 0			
CH 1						Coho 1			
Adult CHIN						Adult Coho			